

FIG. 1A

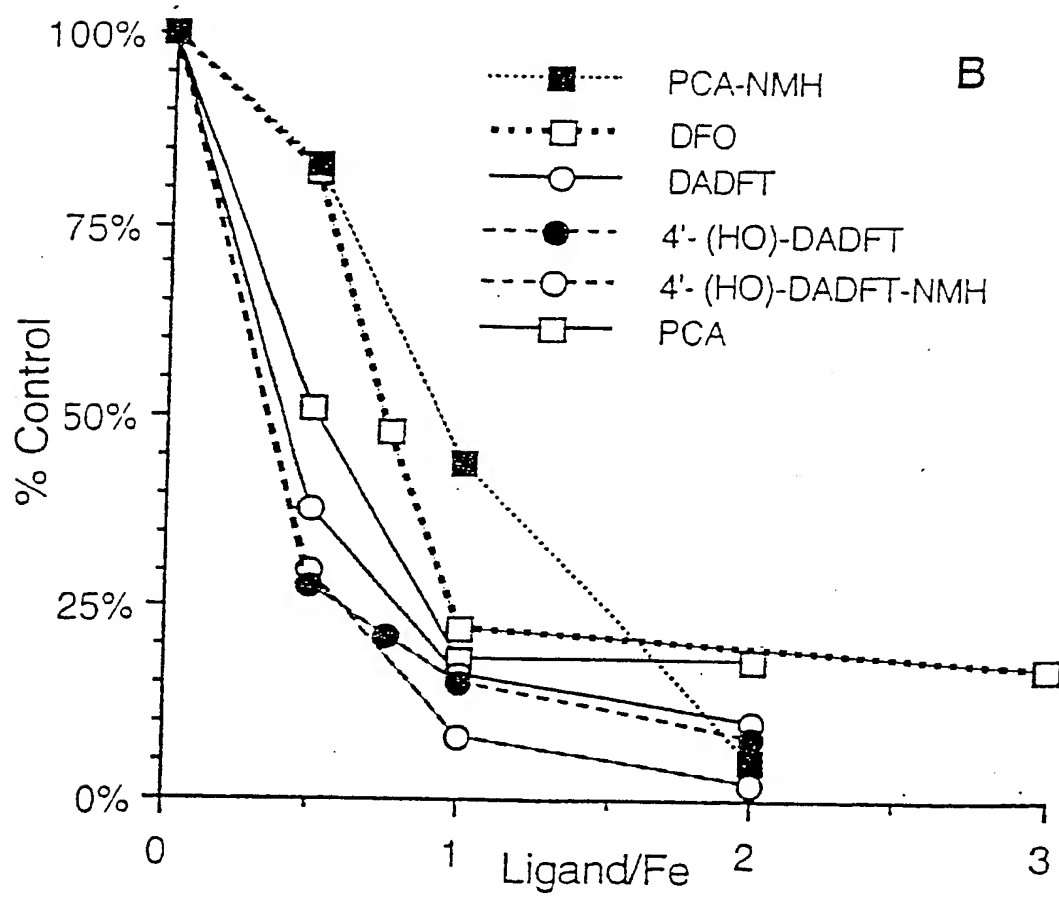


FIG. 1B

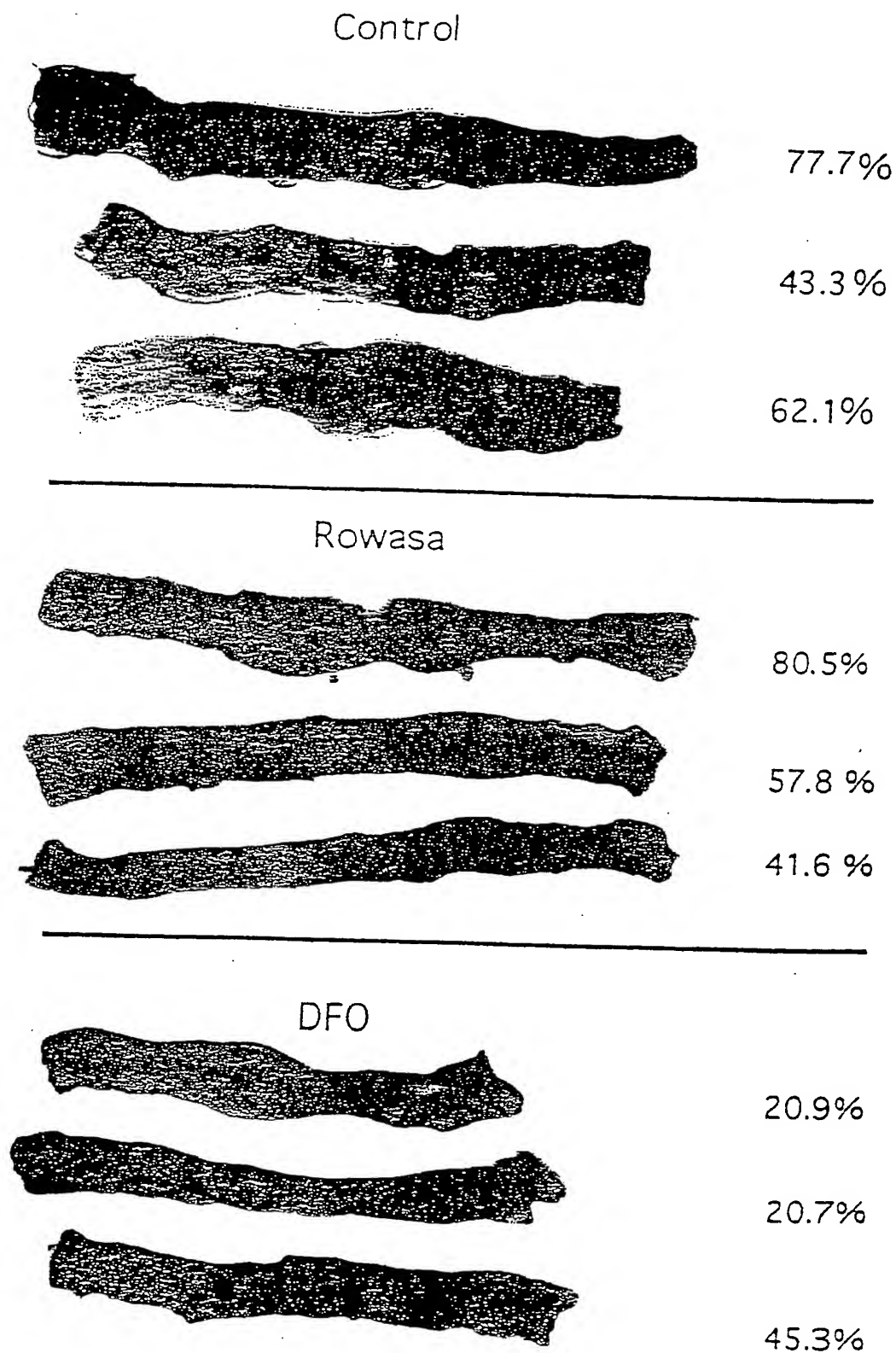


FIG. 2

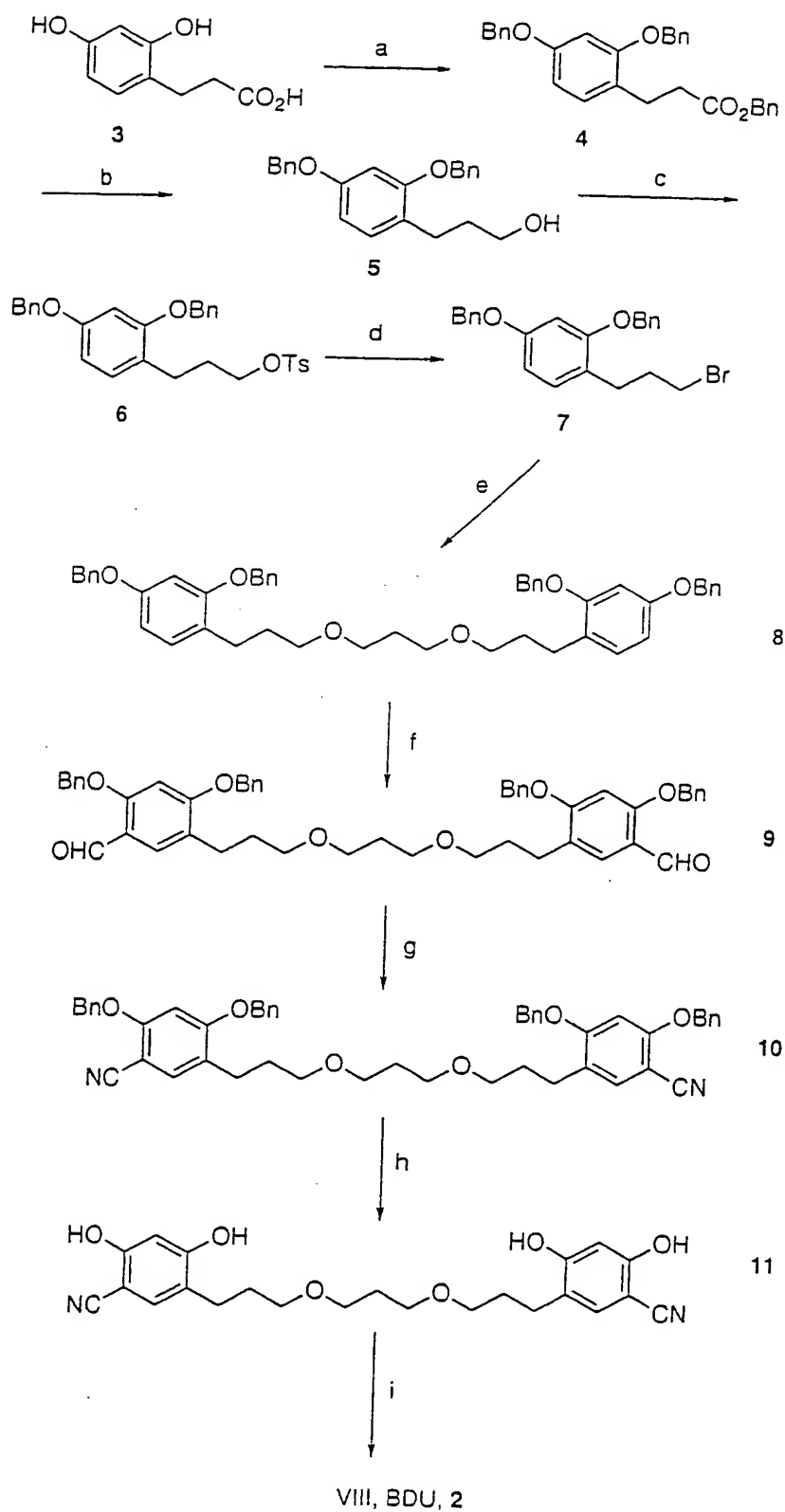


FIG. 3

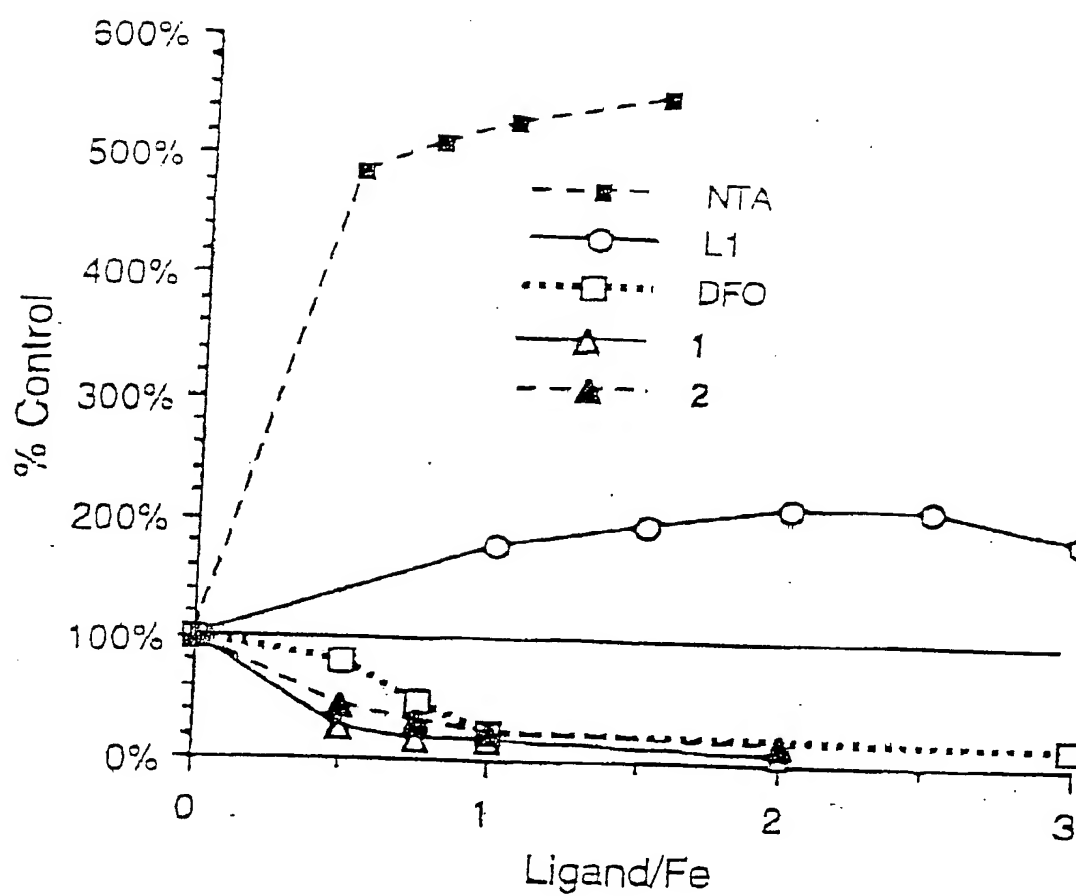


FIG. 4

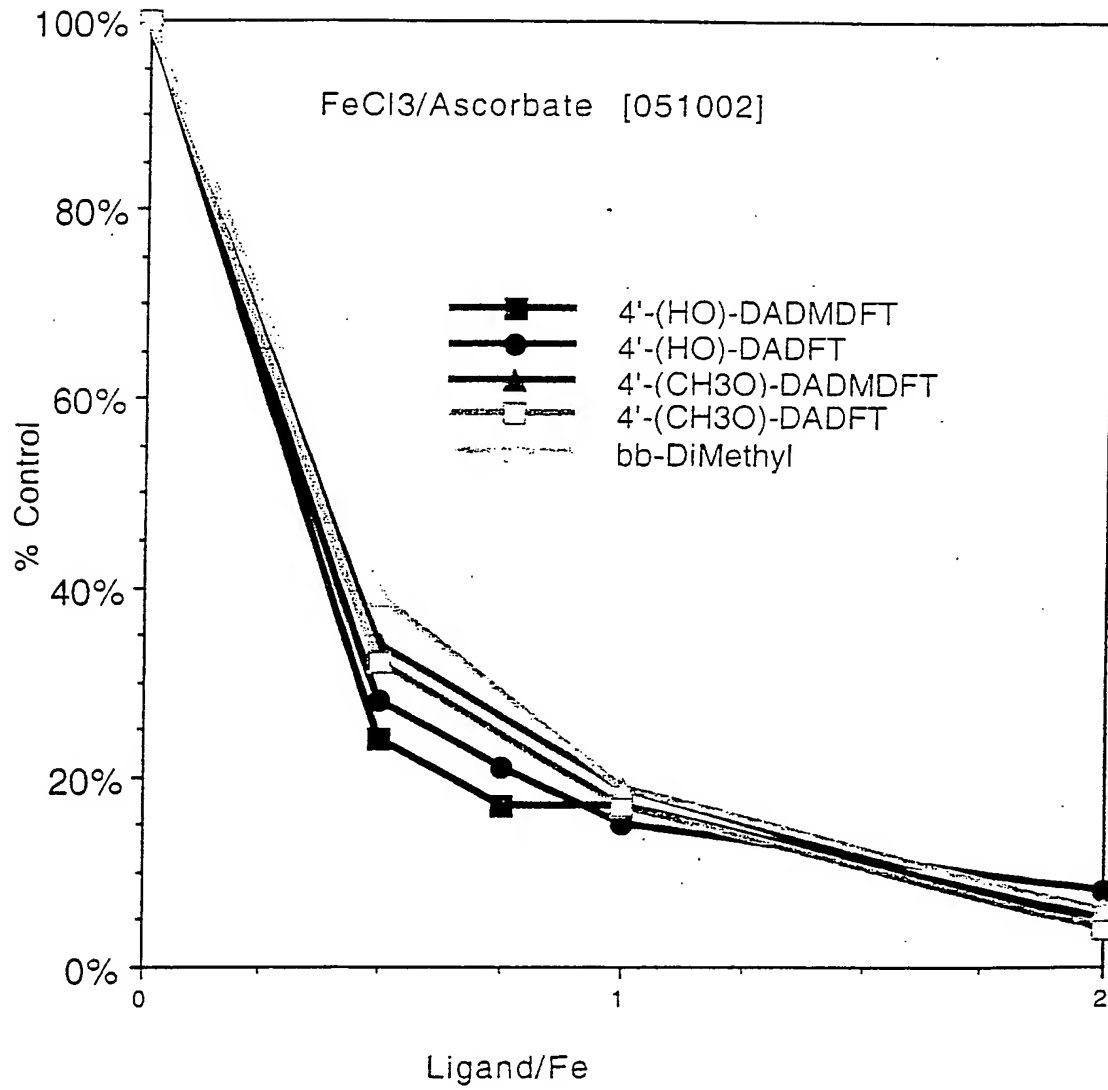


FIG. 5

<i>Compound</i>	<i>Slope x 10³ OD units/μM*</i>
DFT	-0.9
DMDFT	-1.3
PCA	-3.3
DADFT	-25.1
DADMDFT	-28.1
5-ASA	-34.4
PCA-NMH	-34.6
Trolox	-36.6
DMDFT-NMH	-47.4
L1	-52.9
4'-(HO)-DADMDFT	-101.6
4'-(HO)-DADFT	-105.6
4'-(HO)-DADMDFT-NMH	-135.5
DFO	-136.8
4'-(HO)-DADFT-NMH	-141.4

*The slope was derived from A_{734} vs time data over a six-minute reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS^{•+}), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval. Trolox, an analog of Vitamin E, served as a positive control.

FIG. 6

Compound*	N	Damage (%) [†]	P vs control [‡]	P vs parent [§]	MPO activity [¶]	P vs control [‡]	P vs parent [§]
Control (no acid)	10	4 ± 5	<0.001	N/A**	4494 ± 2254	<0.001	N/A
Control 4% acetic acid	13	65 ± 18	N/A	N/A	91479 ± 84927	N/A	N/A
DMDFT-NMH	10	22 ± 17	<0.001	<0.001	14406 ± 8683	<0.005	<0.01
DMDFT	10	61 ± 15	N.S. ††	N/A	39229 ± 27109	<0.05	N/A
(DMDFT-NMH) ₂ /Fe	9	45 ± 24	<0.05	<0.02‡‡	54370 ± 18749	N.S.	<0.001‡‡
PCA	10	44 ± 11	<0.001	N/A	29942 ± 11255	<0.02	N/A
PCA-NMH	9	38 ± 18	<0.002	N.S.	23642 ± 14341	<0.01	N.S.
4'-(HO)-DADMDFT	10	57 ± 15	N.S.	N/A	56466 ± 52617	N.S.	N/A
4'-(HO)-DADMDFT-NMH	10	39 ± 11	<0.001	<0.005	18426 ± 20930	<0.005	<0.05
DFO	9	39 ± 15	<0.001	N/A	20049 ± 17314	<0.01	N/A
4'-(HO)-DADFT	9	62 ± 10	N.S.	N/A	64192 ± 30802	N.S.	N/A
4'-(HO)-DADFT-NMH	8	46 ± 23	<0.05	=0.05	41021 ± 35525	<0.05	N.S.
Rowasa®§§	9	62 ± 19	N.S.	N/A	51805 ± 38165	N.S.	N/A

*All chelators (2 ml) were administered intracolonicly at a dose of 650 µmol kg⁻¹. Rowasa® (2 ml, 66.7 mg ml⁻¹ 5-ASA) was given intracolonicly at a dose of 2318 µmol kg⁻¹.

†Percent damage in scanned images of the colons was measured with the aid of the Adobe Photoshop program; the mean percentage of the image scored as "damaged" (as detailed in the Experimental Section) ± standard deviation is reported.

‡P versus 4% acetic acid control animals.

§P versus animals treated with the respective carboxylic acid.

¶ Myeloperoxidase (MPO) activity expressed as mAU min⁻¹ g of colonic tissue⁻¹, mean ± standard deviation.

**N/A, not applicable.

††N.S., not significant (P > 0.05)

‡‡In this instance, P versus animals treated with free, uncomplexed DMDFT-N.

§§The pharmaceutical preparation, which contains 5-ASA (66.7 mg ml⁻¹), was tested in the rodents.

FIG. 7

Compound	slope x 10 ³ OD units/ μ M ^a
Trolox	-37 ^b
LI	-53 ^b
4'-(OH)-DADMDF	-102 ^b
BDU	-136
DFO	-137 ^b

^a The slope was derived from A_{734} vs time data over a 6-min reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS^{•+}), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval. Trolox, an analogue of vitamin E, served as a positive control.

^b Bergeron, R.J.; Wiegand, J.; Weimar, W.R.; Nguyen, J.N.; Sninsky, C.A., unpublished results.

FIG. 8

compound	slope $\times 10^3$ OD units/ μM^n
4'-(CH ₃ O)-DADMDFT	-33
4'-(CH ₃ O)-DADFT	-36
Trolox	-37
β,β -Dimethyl	-70
4'-(HO)-DADMDFT	-102
4'-(HO)-DADFT	-106

^a The slope was derived from A_{734} vs time data over a 6-min reaction period between the chelator of interest and the 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cation (ABTS^{•+}), which was formed from the reaction between ABTS and persulfate. A negative slope represents a decrease in the amount of highly colored radical cation over the time interval from an initial OD₄₇₀ of 1.000. Trolox, an analogue of vitamin E, served as a positive control.

FIG. 9